ELSEVIER

Nuclear Instruments and Methods in Physics Research B 175–177 (2001) xv–xxi

NIM B
Beam Interactions with Materials & Atoms

www.elsevier.nl/locate/nimb

Contents

Editorial vii

Committees and Sponsors ix

Photocollage xi

Session 1. Fundamentals of Ion-Solid Interactions

Energy dissipation of fast heavy ions in matter
G. Schiwietz, E. Luderer, G. Xiao and P.L. Grande 1

Production of nanodiamonds by high-energy ion irradiation of graphite at room temperature
T.L. Daulton, M.A. Kirk, R.S. Lewis and L.E. Rehn 12

Implantation-induced disorder in *amorphous* Ge: Production and relaxation
M.C. Ridgway, C.J. Glover, I.D. Desnica-Frankovic, K. Furic, K.M. Yu, G.J. Foran, C. Clerc, J.L. Hansen and A. Nylandsted Larsen 21

Accumulation, dynamic annealing and thermal recovery of ion-beam-induced disorder in silicon carbide
W.J. Weber, W. Jiang and S. Thevuthasan 26

Chemical effects in collision cascades
K. Nordlund, J. Nord and J. Keinonen 31

Craters produced on Al, Cu and Au by Ar cluster impacts
R.C. Birtcher, J. Matsuo and I. Yamada 36

Nanocluster formation during ion irradiation of $SiO_2/Ag/SiO_2$ multilayers
R.C. Birtcher, S.E. Donnelly, L.E. Rehn and L. Thomé 40

Range parameters of ^{18}O implanted into Si and SiO_2
J.P. de Souza, M. Behar, J.F. Dias and J.H.R. dos Santos 46

Irradiation-induced defect configurations in Ge substrates characterised with perturbed angular correlation
C.J. Glover, A.P. Byrne and M.C. Ridgway 51

Sputtering of high T_c superconductor $YBa_2Cu_3O_{7-\delta}$ by high energy heavy ions
N. Matsunami, M. Sataka and A. Iwase 56

The study of lattice damage using slow positrons following low energy B^+ implantation of silicon
R.M. Gwilliam, A.P. Knights, A. Nejim, B.J. Sealy, C.P. Burrows, F. Malik and P.G. Coleman 62

Ion-induced photon emission of magnesium aluminate spinel during 60 keV Cu^- implantation
V. Bandourko, T.T. Lay, Y. Takeda, C.G. Lee and N. Kishimoto 68

Effect of Ar irradiation to Xe precipitate in Al
K. Mitsuishi, M. Song, H. Yasuda and K. Furuya 74

Anomalous damaging behaviour of AlAs during ion implantation at 15 K
E. Wendler, B. Breeger and W. Wesch 78

In situ investigation of AlAs/GaAs interfaces during ion implantation at 15 K
E. Wendler, B. Breeger and W. Wesch 83

Track formation in $KTiOPO_4$ by MeV implantation of light ions
W. Wesch, Th. Opfermann, F. Schrempel and Th. Höche 88

0168-583X/01/$ - see front matter © 2001 Published by Elsevier Science B.V. All rights reserved.
PII: S0168-583X(01)00587-0

Experimental energy straggling of protons in thin solid foils
J.C. Eckardt and G.H. Lantschner 93
Random energy loss and straggling study of Li into Si
D.L. da Silva, G. de M. Azevedo, M. Behar, J.F. Dias and P.L. Grande 98

Session 2. Modeling and Simulation

Simulation of topography evolution and damage formation during TEM sample preparation using focused ion beams
W. Boxleitner, G. Hobler, V. Klüppel and H. Cerva 102
Artificial neural network analysis of RBS data of Er-implanted sapphire
N.P. Barradas, A. Vieira and E. Alves 108
High energy ion range and deposited energy calculation using the Boltzmann–Fokker–Planck splitting of the Boltzmann transport equation
I.E. Mozolevski 113
The role of point defects in ion beam induced crystallization of silicon investigated by molecular dynamics simulations
B. Weber and K. Gärtner 119
Improved charge-state formulas
G. Schiwietz and P.L. Grande 125

Session 3. Ion Beam Processing of Electronic, Magnetic and Optical Materials

The effects of radiation damage and impurities on void dynamics in silicon
S.E. Donnelly, V.M. Vishnyakov, R.C. Birtcher and G. Carter 132
Ion beam synthesis of undoped and Er-doped Si nanocrystals
G. Franzò, E.C. Moreira, D. Pacifici, F. Priolo, F. Iacona and C. Spinella 140
Suppression of rare-earth implantation-induced damage in GaN
A. Vantomme, S.M. Hogg, M.F. Wu, B. Pipeleers, M. Swart, S. Goodman, D. Auret, K. Iakoubovskii, G.J. Adriaenssens, K. Jacobs and I. Moerman 148
Efficiency of dislocations and cavities for gettering of Cu and Fe in silicon
B. Stritzker, M. Petravic, J. Wong-Leung and J.S. Williams 154
Electrical, electronic and optical characterisation of ion beam synthesised β-$FeSi_2$ light emitting devices
M.A. Lourenço, T.M. Butler, A.K. Kewell, R.M. Gwilliam, K.J. Kirkby and K.P. Homewood 159
The crystallisation of deep amorphous wells in silicon produced by ion implantation
A.C.Y. Liu, J.C. McCallum and J. Wong-Leung 164
The influence of ion-implantation damage on hydrogen-induced ion-cut
T. Höchbauer, A. Misra, R. Verda, Y. Zheng, S.S. Lau, J.W. Mayer and M. Nastasi 169
Helium implantation induced metal gettering in silicon at half of the projected ion range
A. Peeva, P.F.P. Fichtner, M. Behar, R. Koegler and W. Skorupa 176
Quantitative evolution of vacancy-type defects in high-energy ion-implanted Si: Au labeling and the vacancy implanter
R. Kalyanaraman, T.E. Haynes, M. Yoon, B.C. Larson, D.C. Jacobson, H.-J. Gossmann and C.S. Rafferty 182
Properties of InAs nanocrystals in silicon formed by sequential ion implantation
A.L. Tchebotareva, J.L. Brebner, S. Roorda and C.W. White 187
Self-ion-induced swelling of germanium
B. Stritzker, R.G. Elliman and J. Zou 193
Electron-induced regrowth of isolated amorphous zones in GaAs
I. Jenčič, E.P. Hollar and I.M. Robertson 197
Microstructure of high-energy O and Cu ion-implanted silica glasses
S. Nakao, S.X. Wang, L.M. Wang, M. Ikeyama, Y. Miyagawa and S. Miyagawa 202
Correlation between Er-luminescent centers and defects in Si co-implanted with Er and O
K. Nakashima, O. Eryu, H. Akiyama, Y. Maeda and H. Ebisu 208

High-dose ion implantation into GaN
S.O. Kucheyev, J.S. Williams, J. Zou, C. Jagadish and G. Li 214
Compositional dependence of defect mobility and damage buildup in $Al_xGa_{1-x}As$
A. Stonert, A. Turos, L. Nowicki, B. Breeger, E. Wendler and W. Wesch 219
Porous silicon implanted with nitrogen by plasma immersion ion implantation
A.F. Beloto, M. Ueda, E. Abramof, J.R. Senna, N.F. Leite, M.D. da Silva and H. Reuther 224
Reciprocal space mapping of silicon implanted with nitrogen by plasma immersion ion implantation
E. Abramof, A.F. Beloto, M. Ueda, R. Günzel and H. Reuther 229
Electrical isolation of n-type InP by ion bombardment: Dose dependence and thermal stability
H. Boudinov, J.P. de Souza and C. Jagadish 235
Study of Fe^+ implanted GaN
E. Alves, C. Liu, J.C. Waerenborgh, M.F. da Silva and J.C. Soares 241
Evaluation of free-carrier concentration in Si^+-implanted InP by means of photoluminescence
J. Ibáñez, R. Cuscó, L. Artús, E. de la Puente and J. Jiménez 246
Lattice recovery by rapid thermal annealing in Mg^+-implanted InP assessed by Raman spectroscopy
B. Marcos, J. Ibáñez, R. Cuscó, F.L. Martínez, G. González-Díaz and L. Artús 252
Effects of the ion energy on damage production in MeV ion-implanted GaAs
W. Wesch, E. Wendler and N. Dharmarasu 257
Emission channeling studies of implanted ^{167m}Er in InP
U. Wahl, A. Vantomme, G. Langouche, J.P. Araújo and The ISOLDE collaboration 262
Optical and structural properties of 6H–SiC implanted with silicon as a function of implantation dose and temperature
R. Héliou, J.L. Brebner and S. Roorda 268
Ar-implanted epitaxially grown HgCdTe: evaluation of structural damage by RBS and TEM
M.H. Aguirre and H.R. Cánepa 274
Structural characterisation of amorphised compound semiconductors
M.C. Ridgway, C.J. Glover, K.M. Yu, G.J. Foran, T.W. Lee, Y. Moon and E. Yoon 280
Study of the radiative and nonradiative processes of rare earth implanted semiconductors at low temperatures
T. Kimura, H. Toda, T. Ishida, H. Isshiki and R. Saito 286
Electrical characterisation of epitaxially grown n-GaN bombarded with high- and low-energy protons
F.D. Auret, S.A. Goodman, M. Hayes, M.J. Legodi, S.S. Hullavarad, E. Friedland, B. Beaumont and P. Gibart 292
Electronic transport in thin Cr films modified by Fe ion implantation
C. Heck, A. Chayahara, Y. Horino, Y. Yokota, R.M. Miranda, A.B. Antunes, M.M. Miranda and M.N. Baibich 296
A comparative study of vacancies produced by proton implantation of silicon using positron annihilation and deep level transient spectroscopy
M.A. Lourenço, A.P. Knights, K.P. Homewood, R.M. Gwilliam, P.J. Simpson and P. Mascher 300
Correlation between the depth profiles of the implantation-induced carriers and the lattice strains in high-energy implanted and annealed InP
B. Molnar, M. Fatemi, S.B. Qadri and C.A. Carosella 305
Properties of β-$FeSi_2$ grown by combined ion irradiation and annealing of Fe/Si bilayers
M. Milosavljevic, G. Shao, R.M. Gwilliam, C. Jeynes, C.N. McKinty and K.P. Homewood 309
The control of gold nanocluster sizes and volume fraction in dielectric thin films via ion-beam assisted deposition
S. Schiestel, S.B. Qadri, C.A. Carosella, G.K. Hubler and D. Knies 314
Movement of defects and atoms during ion beam induced crystallization
A. Kinomura, A. Chayahara, N. Tsubouchi, C. Heck, Y. Horino and Y. Miyagawa 319
Metallization of ion beam synthesized Si/3C–SiC/Si layer systems by high-dose implantation of transition metal ions
J.K.N. Lindner, S. Wenzel and B. Stritzker 324

Formation of nanoclusters in Au-implanted bismuth tellurite
A. Kling, M.F. da Silva, J.C. Soares, P.F.P. Fichtner, L. Amaral, F. Zawislak, I. Földvári and Å. Péter. 331
The effects of implantation temperature on He bubble formation in silicon
D.L. da Silva, P.F.P. Fichtner, A. Peeva, M. Behar, R. Koegler and W. Skorupa 335
Gettering centres in high-energy ion-implanted silicon investigated by point defect recombination
R. Kögler, A. Peeva, P. Werner, W. Skorupa and U. Gösele 340
Microstructural changes in silicon thermal oxide induced by high-flux copper negative-ion implantation
H. Amekura, N. Umeda, N. Okubo, C.G. Lee, Y. Takeda and N. Kishimoto. 345

Session 4. Ion Beam Synthesis and Modification of Metals, Ceramics and Insulators

Anisotropic deformation of colloidal particles under MeV ion irradiation
T. van Dillen, E. Snoeks, W. Fukarek, C.M. van Kats, K.P. Velikov, A. van Blaaderen and A. Polman . 350
Strain relaxation of pseudomorphic $Si_{1-x}Ge_x/Si(1\ 0\ 0)$ heterostructures after hydrogen or helium ion implantation for virtual substrate fabrication
B. Holländer, St. Lenk, S. Mantl, H. Trinkaus, D. Kirch, M. Luysberg, T. Hackbarth, H.-J. Herzog and P.F.P. Fichtner 357
Ion surface treatments on organic materials
M. Iwaki. 368
Beam-induced magnetic property modifications: Basics, nanostructure fabrication and potential applications
T. Devolder, H. Bernas, D. Ravelosona, C. Chappert, S. Pizzini, J. Vogel, J. Ferré, J.-P. Jamet, Y. Chen and V. Mathet. 375
Determination of solid-state sulfidation mechanisms in ion-implanted copper
J.C. Barbour, J.W. Braithwaite and A.F. Wright 382
Applications of disorder-induced melting concept to critical-solute-accumulation processes
N.Q. Lam, P.R. Okamoto and J.K. Heuer. 388
Defect evolution and characterization in He-implanted $LiNbO_3$
A. Kling, M.F. da Silva, J.C. Soares, P.F.P. Fichtner, L. Amaral and F. Zawislak 394
On the behaviour of enhanced mixing in metal/ceramic interfaces
R. Nagel and A.G. Balogh 398
Modification of stainless steel and aluminium with pulsed energetic ion beams in the millisecond regime
D. Heyden, D. Müller, G.K. Wolf, L. Amaral and M. Behar 403
Influence of post-implantation thermal and laser annealing on the stability of metal–alloy nanoclusters in silica
G. Battaglin, E. Cattaruzza, C. de Julian Fernandez, G. De Marchi, F. Gonella, G. Mattei, C. Maurizio, P. Mazzoldi, A. Miotello, C. Sada and F. D'Acapito 410
Phase transformation induced in pure zirconia by high energy heavy ion irradiation
A. Benyagoub, F. Couvreur, S. Bouffard, F. Levesque, C. Dufour and E. Paumier 417
Photoluminescence from Si nanocrystals in silica: The effect of hydrogen
S. Cheylan and R.G. Elliman 422
Co-irradiation effects of intense heavy ions and photons on surface modification of insulators
N. Kishimoto, N. Okubo, C.G. Lee, N. Umeda and Y. Takeda. 426
Nucleation and growth behavior of Cu–Al precipitates in He implanted and annealed aluminum
G. Feldmann, P.F.P. Fichtner and F.C. Zawislak 432
Degradation of polyimide by 100 keV He^+, Ne^+, Ar^+ and Kr^+ ions
V. Hnatowicz, V. Peřina, A. Macková, V. Švorčík, V. Rybka, D. Fink and J. Heitz 437
Germanium implantation into amorphous carbon films
L.G. Jacobsohn and F.L. Freire Jr. 442
Phase transformations in nitrogen-implanted iron layers
J. Jagielski, M. Kopcewicz, W. Matz, R. Grötzschel and L. Thomé 448
Lattice location of Cs atoms in cubic ZrO_2 single crystals
L. Thomé, J. Jagielski, A. Gentils and F. Garrido 453

Giant segregation effect and surface mechanical modification of aluminum alloys by oxygen plasma source ion implantation
M. Bolduc, D. Popovici and B. Terreault 458
Optical transient resonance of copper nanoparticle composites synthesized by negative ion implantation
Y. Takeda, N. Umeda, V.T. Gritsyna and N. Kishimoto 463
Formation of Ge nanowires in oxidized silicon V-grooves by ion beam synthesis
T. Müller, K.-H. Heinig and B. Schmidt 468
High pressure annealing of defects induced by ion implantation on graphite
S.R.S. Soares, N.M. Balzaretti, R.P. Livi, A.S. Pereira and J.A.H. da Jornada 474
Magnetic properties of Co and Ni based alloy nanoparticles dispersed in a silica matrix
C. de Julián Fernández, C. Sangregorio, G. Mattei, C. Maurizio, G. Battaglin, F. Gonella, A. Lascialfari, S. Lo Russo, D. Gatteschi, P. Mazzoldi, J.M. Gonzalez and F. D'Acapito 479
Solid-state reaction in Fe/V multilayers by ion beam mixing with thermal annealing
J.F.M. Borges, M.I. da Costa Jr., S.R. Teixeira, J.B.M. da Cunha and M.C.M. Alves 485
Optical properties of Ir^{2+}-implanted silica glass
J.C. Cheang-Wong, A. Oliver, J. Roiz, J.M. Hernández, L. Rodríguez-Fernández, J.G. Morales and A. Crespo-Sosa 490
Optical absorption and emission studies of 2 MeV Cu-implanted silica glass
A. Oliver, J.C. Cheang-Wong, J. Roiz, J.M. Hernández, L. Rodríguez-Fernández and A. Crespos 495
Study of new surface structures created on sapphire by Co ion implantation
C. Marques, M.M. Cruz, R.C. da Silva and E. Alves 500
Enhanced adhesion between polycarbonate substrates and tin-doped indium oxide films by ion-assisted reaction
J.-S. Cho and S.-K. Koh 505
The effects of Ar post-bombardment and heat treatment on hardness of N implanted iron
C.E. Foerster, C.M. Lepienski, F.C. Nascimento and F.C. Serbena 511
Precursory stage of damage production in argon irradiated cubic zirconia
J. Fradin, T. Thomé, R.I. Grynszpan, L. Thomé, W. Anwand and G. Brauer 516
Grain growth in Zr–Fe multilayers under in situ ion irradiation
A.T. Motta, A. Paesano Jr., R.C. Birtcher and L. Amaral 521
Point defect energetics in the ZrNi and Zr_2Ni intermetallics
C.S. Moura, A.T. Motta, N.Q. Lam and L. Amaral 526
Densification of glassy carbon by fluorine ion implantation
H. Toida, K. Terashima, T. Kobayashi, M. Osada, K. Watanabe and M. Iwaki 532
Ti:sapphire formation via the co-implantation of Ti and O ions into sapphire
L.D. Morpeth and J.C. McCallum 537
Hydrophilic group formation and cell culturing on polystyrene Petri-dish modified by ion-assisted reaction
K.-H. Kim, J.-S. Cho, D.-J. Choi and S.-K. Koh 542
Metallic nanoparticles formed in polyimide by ion implantation
T. Kobayashi, T. Iwata, Y. Doi and M. Iwaki 548
Carbon diffusion and nanocrystalline diamond formation in carbon ion-implanted oxides studied by nuclear elastic scattering
J.O. Orwa, D.N. Jamieson, S. Prawer and J.C. McCallum 554
Memory effect on ion beam-induced depolymerization of PMMA
G. Compagnini, G.G.N. Angilella, A. Raudino and O. Puglisi 559
Filters with <100 nm radius pores for gas separation formed by high-energy ion irradiation of polymers
R. Sudowe, P. Vater, R. Brandt, J. Vetter and W. Ensinger 564
Heteroepitaxial SiC films grown in Si by CH_4 plasma immersion ion implantation: Conditions and mechanisms of their formation
K. Volz, Ch. Klatt and W. Ensinger 569

Pitting corrosion of aluminium coated with amorphous carbon films by argon ion beam assisted deposition at low process temperature
O. Lensch, K. Volz, M. Kiuchi and W. Ensinger 575
Annealing effects on luminescence from Ce-implanted α-Al_2O_3
K. Aono, H. Toida, K. Terashima and M. Iwaki 580
Temperature and angular effects on the channelled implantation of Er into Si(1 1 1)
S.M. Hogg, A. Vantomme, M.F. Wu, B. Pipeleers and M. Swart 585
Heavy-ion induced damage in fluorite nanopowder
M. Boccanfuso, A. Benyagoub, M. Toulemonde, C. Trautmann, K. Schwartz and Ch. Dufour 590
The effect of N^+ ion energy on the properties of ion bombarded plasma polymer films
E.C. Rangel, N.C. da Cruz, M.H. Tabacniks and C.M. Lepienski 594
Annealing of chromium oxycarbide coatings deposited by plasma immersion ion processing (PIIP) for aluminum die casting
A.M. Peters, X.M. He, M. Trkula and M. Nastasi 599
Study of ion beam induced depolymerization using positron annihilation techniques
O. Puglisi, M.E. Fragalà, K.G. Lynn, M. Petkov, M. Weber, A. Somoza, A. Dupasquier and F. Quasso 605
Damage accumulation and recovery in gold-ion-irradiated barium titanate
W. Jiang, W.J. Weber and S. Thevuthasan 610
Ion irradiation-induced amorphization of two GeO_2 polymorphs
S.X. Wang, L.M. Wang and R.C. Ewing 615
Microhardness characterization of multilayers modified by ion beam mixing
E. Blando, E.K. Tentardini and R. Hübler 620
TiN structural modifications induced by bias voltage in a new dynamic controlled magnetron sputtering apparatus
E.K. Tentardini, E. Blando and R. Hübler 626
Ion beam mixing of Ti–TiN multilayers for tribological and corrosion protection
R. Hübler 630
Physical and optical characterisation of Ge-implanted silica
A. Dowd, D. Llewellyn, R.G. Elliman, B. Luther-Davies, M. Samoc and J.D. Fitz Gerald 637
Nano-scale elastic property changes of ion-implanted graphite
H. Ogiso, S. Nakano, H. Tokumoto and K. Yamanaka 641
Characterization of mechanical properties and microstructure of high-energy dual ion implanted metals
S. Taniguchi, A. Kitahara, S. Wakayama, E. Eriguchi and N. Suyama 647
Optical property changes of silica glass and sapphire induced by Cu and O implantation
M. Ikeyama, S. Nakao, M. Tazawa, K. Kadono and K. Kamada 652
Determination of ion incidence angles in plasma immersion ion implantation by means of a hollow multi-aperture target
M. Galonska, Ch. Gabor, R.W. Thomae, H. Klein, K. Volz and W. Ensinger 658
Surface smoothening and compaction of silica glass under dynamic negative ion mixing
N. Okubo, Y. Takeda, H. Amekura, J.P. Zhao, V.T. Gritsyna and N. Kishimoto 663
Mechanical properties of He irradiated and annealed AZ-1350 J^{TM} films
C.M. Lepienski, I.T.S. Garcia, C.E. Foerster, F.C. Serbena and F.C. Zawislak 668
Nanoscratch testing of C_{60} thin films irradiated with N ions
J.M.J. Lopes, C.E. Foerster, F.C. Serbena, C.M. Lepienski, D.L. Baptista and F.C. Zawislak 673
Ion beam synthesis of gallium nitride
P.J. Kench, J.M. Shannon, G. Shao, P. Tsakiropoulos and S.R.P. Silva 678
Examination of the metastable and stable pitting corrosion of aluminum modified with carbon by ion beam techniques
O. Lensch, B. Enders, J. Knecht and W. Ensinger 683
Intrinsic residual stresses in metal films synthesized by energetic particle deposition
A. Misra and M. Nastasi 688

Session 5. Processing and Synthesis with Low Energy Ions

Low energy nitrogen implantation into Si and SiO_2/Si
C. Krug, T.D.M. Salgado, F.C. Stedile and I.J.R. Baumvol 694
Surface modifications in diamond-like carbon films submitted to low-energy nitrogen ion bombardment
S.I. Castañeda, V.A.A. Espinoza, F.L. Freire Jr., D.F. Franceschini and L.G. Jacobsohn 699
Isotope-beam modification of materials at eV energies
C. Krug, C. Radtke, F.C. Stedile and I.J.R. Baumvol 705
Layer splitting in Si by H + He ion co-implantation: Channeling effect limitation at low energy
C. Qian, B. Terreault and S.C. Gujrathi 711
High dose nitrogen and carbon shallow implantation in Si by plasma immersion ion implantation
M. Ueda, H. Reuther, R. Gunzel, A.F. Beloto, E. Abramof and L.A. Berni 715
The effect of ion bombardment on the properties of TiO_x films deposited by a modified ion-assisted PECVD technique
N.C. da Cruz, E.C. Rangel, M.H. Tabacknics, B.C. Trasferetti and C.U. Davanzo 721
Ion beam analysis of plasma nitrided Ti6Al4V-ELI
C.S. Javorsky, T.R. Strohaecker, J.A.T. Borges da Costa and M.A.Z. Vasconcellos 726
Surface modification of porous polymeric membranes by RF-plasma treatment
E.F. Castro Vidaurre, C.A. Achete, R.A. Simão and A.C. Habert 732
Annealing behaviour of foreign atom incorporated Co-silicides formed by MEVVA implantation into SiO_2/Si and Si_3N_4/Si structures
Y. Zhang, T. Zhang, D.-T. Lu, I.A. Maximov, E.-L. Sarwe, M. Graczyk and H.J. Whitlow 737

Session 6. Ion Beam Applications and Technologies

A role for ion implantation in quantum computing
D.N. Jamieson, S. Prawer, I. Andrienko, D.A. Brett and V. Millar 744
Carrier activation in in situ Si-doped GaAs layers fabricated by a focused Si ion beam and molecular beam epitaxy combined system
T. Hada, H. Miyamoto, J. Yanagisawa, F. Wakaya, Y. Yuba and K. Gamo 751
Large area IBAD deposition of Zn-alloys in the coil coating mode
G.K. Wolf, G. Preiß, R. Münz and L. Guzman 756
Ion beams as analytical tools in the thermal growth of ultrathin silicon oxide films
E.B.O. da Rosa, S. Gonçalves, R.M.C. de Almeida, I.J.R. Baumvol and F.C. Stedile 762
Alloying of Pd into Ti by pulsed plasma beams
Z. Werner, J. Piekoszewski, A. Barcz, R. Grözschel, F. Prokert, J. Stanisławski and W. Szymczyk 767
New compact design for an ion source
H. Huck, D.E. DiGregorio, J.O. Fernández Niello, E.B. Halac, M. Igarzábal, J. Orecchia and M.E. Reinoso 772
Fabrication of micromechanical structures on substrates selectively etched using a micropatterned ion-implantation method
S. Nakano, S. Nakagawa, H. Ishikawa and H. Ogiso 777
Electrical and optical effects of He^+ ion irradiation in InGaP/GaAs/InGaAs lasers
I. Danilov, L.L. Pataro, M.P.P. de Castro, G.C. do Nascimento and N.C. Frateschi 782
Light element analysis using ERDA method with an ionization chamber
N. Added, J.F.D. Chubaci, M. Matsuoka, R.A. Castro, M. Radtke, E. Alonso, R. Liguori Neto, M.A. Rizzuto, M. Tabacniks and R.D. Mansano 787
Plasma protein adsorption onto cell attachment controlled ion implanted collagen
K. Kurotobi, M. Kaibara, Y. Suzuki, M. Iwaki and H. Nakajima 791
Antimony implanted in silicon – A thin layer reference material for surface analysis
K.H. Ecker, A. Berger, R. Grötzschel, L. Persson and U. Wätjen 797

Author index 802